5989

KAMPCO
STEEL PRODUCTS, INC.

57533 (R 3) CR 3 S. • ELKHART, INDIANA 46517 • (219) 294-5466

May 9, 1989

Waste Management Division
U.S. E.P.A. -Region V
230 South Dearborn St.
Chicago, Illinois 60604

Atten: Ms Susan Swales (SHS-11)

Dear Ms Swales:

The people that have formulated the information on this report are Raymond E. Gamble, sales and F. Edward Freel, Vice President of Finance and Treasurer.

The documents used in this report are the M.S.D.S. papers and the transporter's manifest papers.

There is no one else beside Raymond Gamble and Edward Freel for information on this report.

We at KampCo Steel Products Inc. manufacture horse trailer and truck body parts. We also make custom design parts for different customers throghout the country. The manufacturing processes consist of shearing, braking and welding of parts for customers. KampCo started in September of 1972.

The ingredients and raw materials used by KampCo Steel Products throughout this time period is the attached M.S.D.S. papers of steel, Aluminum, oil and drawing products.

The waste generated at KampCo Steel Porducts consist of run-off oils and drawing compound mix. This mix amounts to about 25 gallons every year and a half. Some years we do not have any waste build-up. KampCo Steel Products U.S. E.P.A. number is as follows: I.N.D. 058956806. We received this number in 1985.

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KampCo Steel Products waste was picked up in October 1985 by Chemical Services Corp. at 5330 West 137th Place, Crestwood, Illinois 60445. Their U.S. E.P.A. Number is: ILD 980701100 and taken to chem-Net Services, 18550 Allen Rd., Wyandotte, Michigan 48192. Also KampCo Steel Products used Amoco Oil of South Bend Indiana to pump our pits out, and reclaim our used oils. They restored them for future use as a drawing compound.

KampCo Steel Products did not dispose of any wastes on our property in the time period of 1972 to 1976, or up to the date of May 1989.

KampCo Steel Products waste material was never taken to HimCo at any time during 1972 to 1976 and up to date of 1989.

The only thing that was and is taken to HimCo is office trash and the (2) Brake room's trash and bath room trash.

Sincerely,

KAMPCO STEEL PRODUCTS INC.
Raymond E Gamble
F. Edward Freel
Raymond E. Gamble
Sales
F. Edward Freel
V.P. of Finance & Treasurer

RG/EF/sf

MATERIAL SAFETY
DATA SHEET

item # 5

AMOCO AW OIL NO. 46

MANUFACTURER:
Amoco Oil Company
200 East Randolph Drive
Chicago, Illinois 60601

EMERGENCY HEALTH INFORMATION: (800) 447-8735
EMERGENCY SPILL INFORMATION: (800) 424-9300
OTHER PRODUCT SAFETY INFORMATION: (312) 856-3907

IMPORTANT COMPONENTS: Hydrofinished, solvent-refined paraffinic petroleum oil. CAS #64742-54-7.

WARNING STATEMENT: None required.

APPEARANCE AND ODOR: Lily-white, oily liquid.

HEALTH HAZARD INFORMATION

EYE

EFFECT: No significant irritation expected.

FIRST AID: Flush eyes with plenty of water.

PROTECTION: None required, however, use of safety glasses is good industrial practice.

SKIN

EFFECT: None expected for single short-term exposures. Prolonged or repeated contact may produce some irritation.

FIRST AID: None required.

PROTECTION: Wear protective gloves if prolonged or repeated contact is likely.

INHALATION

EFFECT: None expected under normal conditions of use.

FIRST AID: None required.

PROTECTION: None required for usual conditions of use.

INGESTION

EFFECT: Expected to be relatively non-toxic.

FIRST AID: If a large amount is swallowed, induce vomiting, get medical attention.

FIRE AND EXPLOSION INFORMATION

FLASHPOINT: 400°F, Minimum (COC)

EXTINGUISHING MEDIA: Agents approved for Class B hazards (e.g., dry chemical, carbon dioxide, halogenated agents, foam, steam) or water fog.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None.

REACTIVITY INFORMATION

STABILITY: Stable.

CHEMICAL AND PHYSICAL PROPERTIES

SOLUBILITY IN WATER: Negligible, below 0.1%

SPECIFIC GRAVITY (WATER = 1): 0.88

VISCOSITY: 220-250 SUS @ 100°F VISCOSITY INDEX: 90 minimum

POUR POINT: Maximum -20°F (-29°C)

STORAGE AND ENVIRONMENTAL PROTECTION

STORAGE REQUIREMENTS: No special requirements.

SPILLS AND LEAKS: Treat as an oil spill. Contain and remove by mechanical means.

WASTE DISPOSAL: Enclosed-controlled incineration unless directed otherwise by applicable ordinances.

SPECIAL PRECAUTIONS: Avoid strong oxidizers.

TOXICOLOGICAL INFORMATION

EYE: A similar product produced a maximum primary eye irritation score of 4.7/110.0; 1 hour (rabbits).

SKIN: A similar product produced a dermal LD50 greater than 5g/kg (rabbits).

INGESTION: A similar product produced an oral LD50 greater than 10g/kg (rats).

REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: Not hazardous per 29 CFR 1910.1200(d).

DOT PROPER SHIPPING NAME (BULK, LAND): Not regulated.

Truck/Rail Shipping Class: Petroleum Lubricating Oil.

ISSUE INFORMATION

BY: Stephen A. Elbert

Stephen A. Elbert
Mgr., Product Safety & Toxicology

ISSUED: June 05, 1985
SUPERSEDES: January 02, 1985

MATERIAL SAFETY
DATA SHEET

RYKON OIL NO. 68

MANUFACTURER:
Amoco Oil Company
200 East Randolph Drive
Chicago, Illinois 60601

EMERGENCY HEALTH INFORMATION: (800) 447-8735
EMERGENCY SPILL INFORMATION: (800) 424-9300
OTHER PRODUCT SAFETY INFORMATION: (312) 856-3907

IMPORTANT COMPONENTS: Hydrofinished solvent refined paraffinic petroleum oil. CAS #64742-54-7.
Solvent refined paraffinic petroleum oil. CAS #64741-88-4.

WARNING STATEMENT: None required.

APPEARANCE AND ODOR: Pale colored oil.

HEALTH HAZARD INFORMATION

EYE

EFFECT: No significant irritation expected.

FIRST AID: Flush eyes with plenty of water.

PROTECTION: None required; however, use of safety glasses is good industrial practice.

SKIN

EFFECT: None expected for single short-term exposures. Prolonged or repeated contact may produce some irritation.

FIRST AID: None required.

PROTECTION: Wear protective gloves if prolonged or repeated contact is likely.

INHALATION

EFFECT: None expected under normal conditions of use.

FIRST AID: None required.

PROTECTION: None required for normal conditions of use.

INGESTION

EFFECT: Expected to be relatively non-toxic.

FIRST AID: If a large amount is swallowed, induce vomiting. Get medical attention.

FIRE AND EXPLOSION INFORMATION

FLASHPOINT: 380°F, (COC) Minimum

EXTINGUISHING MEDIA: Agents approved for Class B hazards (e.g., dry chemical, carbon dioxide, halogenated agents, foam, steam) or water fog.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None.

REACTIVITY INFORMATION

STABILITY: Stable.

CHEMICAL AND PHYSICAL PROPERTIES

SOLUBILITY IN WATER: Negligible, below 0.1%

SPECIFIC GRAVITY (WATER = 1): 0.88

VISCOSITY: 320-340 SSU @ 100°F VISCOSITY INDEX: 110 minimum

POUR POINT: -30°F maximum

STORAGE AND ENVIRONMENTAL PROTECTION

STORAGE REQUIREMENTS: No special requirements.

SPILLS AND LEAKS: Treat as an oil spill. Contain and remove by mechanical means.

WASTE DISPOSAL: Disposal must be in accordance with applicable federal, state, or local regulations. Enclosed-controlled incineration is recommended unless directed otherwise by applicable ordinances.

SPECIAL PRECAUTIONS: Avoid strong oxidizers.

TOXICOLOGICAL INFORMATION

Specific toxicity tests have not been conducted on this product. Our hazard evaluation is based on information from similar products, the ingredients, technical literature, and/or professional experience.

REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: Not hazardous per 29 CFR 1910.1200(d).

DOT PROPER SHIPPING NAME (BULK, LAND): Not regulated.

ISSUE INFORMATION

BY: Stephen A. Elbert

Stephen A. Elbert
Mgr., Product Safety & Toxicology

ISSUED: July 15, 1985
SUPERSEDES: January 02, 1985

MATERIAL SAFETY
DATA SHEET

AMOCOOL SOLUBLE OIL

MANUFACTURER:
Amoco Oil Company
200 East Randolph Drive
Chicago, Illinois 60601

EMERGENCY HEALTH INFORMATION: (800) 447-8735
EMERGENCY SPILL INFORMATION: (800) 424-9300
OTHER PRODUCT SAFETY INFORMATION: (312) 856-3907

IMPORTANT COMPONENTS: Solvent refined paraffinic petroleum oil, CAS No 64741-88-4; ACGIH for oil mist 5 mg/m3.
Petroleum sulfonate.
2-Butoxyethanol, CAS No. 111-76-2, ACGIH TLV (skin) 25 ppm (120 mg/m3), OSHA PEL 50 ppm (240 mg/m3).

WARNING STATEMENT: None required.

APPEARANCE AND ODOR: Light colored, oily liquid.

HEALTH HAZARD INFORMATION

EYE

EFFECT: No significant irritation expected.

FIRST AID: Flush eyes with plenty of water.

PROTECTION: None required; however, use of safety glasses is good industrial practice.

SKIN

EFFECT: None expected for single short-term exposures. Prolonged or repeated contact may produce some irritation.

FIRST AID: None required.

PROTECTION: Wear protective clothing and gloves if prolonged or repeated contact is likely.

INHALATION

EFFECT: None expected under normal conditions of use.

FIRST AID: None required.

PROTECTION: None required for normal conditions of use.

INGESTION

EFFECT: Expected to be relatively non-toxic.

FIRST AID: If a large amount is swallowed, induce vomiting. Get medical attention.

FIRE AND EXPLOSION INFORMATION

FLASHPOINT: Not applicable.

EXTINGUISHING MEDIA: Not applicable.

REACTIVITY INFORMATION

STABILITY: Stable.

CHEMICAL AND PHYSICAL PROPERTIES

SOLUBILITY IN WATER: Emulsifiable.

SPECIFIC GRAVITY (WATER = 1): 0.91

VISCOSITY: 300-600 SUS @ 100°F.

POUR POINT: 15°F Maximum.

STORAGE AND ENVIRONMENTAL PROTECTION

STORAGE REQUIREMENTS: No special requirements.

SPILLS AND LEAKS: Contain and remove by mechanical means.

WASTE DISPOSAL: Enclosed-controlled incineration or permitted landfill unless directed otherwise by applicable ordinances.

TOXICOLOGICAL INFORMATION

EYE: Maximum primary eye irritation score 15.3/110.0 (rabbits).

SKIN: Dermal LD50 greater than 5 g/kg (rabbits). A similar product produced a primary dermal irritation score of 4.4/8.0 (rabbits).

INHALATION: LC50 greater than 1.29 mg/liter (rats).

INGESTION: Acute oral LD50 greater than 10 g/kg (rats).

This product contains 2-butoxyethanol. Repeated overexposure to 2-butoxyethanol may result in anemia. Overexposure to 2-butoxyethanol should be occur if the ACGIH TLV for oil mist is observed.

REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: Listed by ACGIH.

DOT PROPER SHIPPING NAME (BULK, LAND): Not regulated.

MATERIAL SAFETY
DATA SHEET

AMOSOL NAPHTHA 395HF

MANUFACTURER:
Amoco Oil Company
200 East Randolph Drive
Chicago, Illinois 60601

EMERGENCY HEALTH INFORMATION: (800) 447-8735
EMERGENCY SPILL INFORMATION: (800) 424-9300
OTHER PRODUCT SAFETY INFORMATION: (312) 856-3907

IMPORTANT COMPONENTS: Petroleum naphtha. ACGIH TWA TLV 100 ppm(575 mg/m3).

WARNING STATEMENT: Combustible. Can be harmful if high concentrations are inhaled. Can produce skin irritation upon prolonged or repeated contact. Harmful if swallowed and/or aspirated into lungs. See also Supplemental Information.

APPEARANCE AND ODOR: Clear liquid.

HEALTH HAZARD INFORMATION

EYE

EFFECT: None expected. See Toxicology Section.

FIRST AID: Flush eyes with plenty of water.

PROTECTION: None required, however, use of safety glasses is good industrial practice.

SKIN

EFFECT: Can cause skin irritation on prolonged or repeated contact. See Toxicology Section.

FIRST AID: Wash exposed skin with soap and water. Remove contaminated clothing, including shoes, and thoroughly clean and dry before reuse.

PROTECTION: If contact is likely, wear protective clothing and gloves. Avoid prolonged or repeated skin contact.

INHALATION

EFFECT: Can be harmful if high concentrations are inhaled. Inhalation of high concentrations results in dizziness, headache and nausea. See Toxicology Section.

FIRST AID: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get medical attention.

PROTECTION: If ventilation is inadequate, use NIOSH/MSHA certified respirator which will provide protection against organic vapor/mist. Avoid breathing vapor or mist. Use with adequate ventilation.

HEALTH HAZARD INFORMATION - CONTINUED

INGESTION

EFFECT: Expected to be relatively non-toxic. Harmful or fatal if swallowed and/or aspirated into lungs. Low viscosity product. See Toxicology Section.

FIRST AID: If swallowed, do NOT induce vomiting, get immediate medical attention.

FIRE AND EXPLOSION INFORMATION

FLASHPOINT: 100°F, (TCC)

FLAMMABLE LIMITS: UPPER: 7% LOWER: 1%

EXTINGUISHING MEDIA: Agents approved for Class B hazards (e.g. dry chemical, carbon dioxide, halogenated agents, foam) and water fog.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None.

PRECAUTIONS: Keep away from heat and open flame.

CHEMICAL AND PHYSICAL PROPERTIES

BOILING POINT: 300°F TO 395°F, Range

SOLUBILITY IN WATER: Negligible, below 0.1%.

SPECIFIC GRAVITY (WATER = 1): 0.79

STORAGE AND ENVIRONMENTAL PROTECTION

STORAGE REQUIREMENTS: Store in a combustible liquids storage area.

SPILLS AND LEAKS: Eliminate all sources of ignition. Contain on an absorbent material.

WASTE DISPOSAL: Enclosed-controlled incineration unless directed otherwise by applicable ordinances.

SPECIAL PRECAUTIONS: Avoid strong oxidizers.

TOXICOLOGICAL INFORMATION

EYE: Primary irritation score of 0.67/110.0; 96 hours (rabbits).

SKIN: Primary irritation score of 1.1/8.0 (rabbits). Acute dermal LD50 greater than 2g/kg (rabbits).

INHALATION: Acute LC50 greater tha 11.5mg/liter; 6 hours (rats).

INGESTION: Acute oral LD50 greater than 5g/kg (rats).

VAN STRAATEN
Chemical Company

Metal Forming Lubricant

20 GAL. WATER / 1 GAL. LUBE

71-081-B

PRODUCT INFORMATION

VERSATILE SEMI-SYNTHETIC METAL FORMING LUBRICANT NITRITE AND PHENOL-FREE

VAN STRAATEN 71-081-B is a water dilutible semi-synthetic lubricant applicable for the tube forming operations of ferrous and non ferrous metals. This product offers excellent cleanliness and in-process corrosion control. VAN STRAATEN 71-081-B contains a light blue dye in the concentrate, and forms a stable, translucent blue emulsion in both hard and soft water.

KEY PERFORMANCE BENEFITS

Non-nitrited and Non-phenolic - to meet the most stringent industrial chemical restrictions for both operator safety and waste disposal requirements.

Outstanding cleanliness - promotes safety, keeps machine tools working efficiently. No slippery, oily residues on either the machine tool or workpiece.

Effective rust control - based on combined polar and passivating rust protection, prevents in-process corrosion of steel and helps protect machine tools from damaging bi-metallic corrosion.

Resists rancidity and mold growth - ends Monday morning odor problems. Provides extended service in recirculating central systems without requiring special maintenance procedures.

Easy to mix - even in hard water, forming a blue, translucent mix that permits the machinist to see his work in progress.

Safe and pleasant to use - mild to machine operators' skin, clean, non-flammable, characterized by a fresh neutral odor.

RECOMMENDED DILUTIONS

Tube forming operations — 20:1

Cleaner: 3625

Run at 2% by Volume — 50 gal water / 1 gal cleaner

630 W. Washington Blvd • Chicago IL 60606 • (312) 454-1000 • Telex 25-3556

Metal Forming Lubricant

71-081-B 55gal .585/# 4.86 gal

APPLICATIONS, SPECIFICATIONS, AND PROPERTIES

TYPICAL PHYSICIAL AND CHEMICAL CHARACTERISTICS

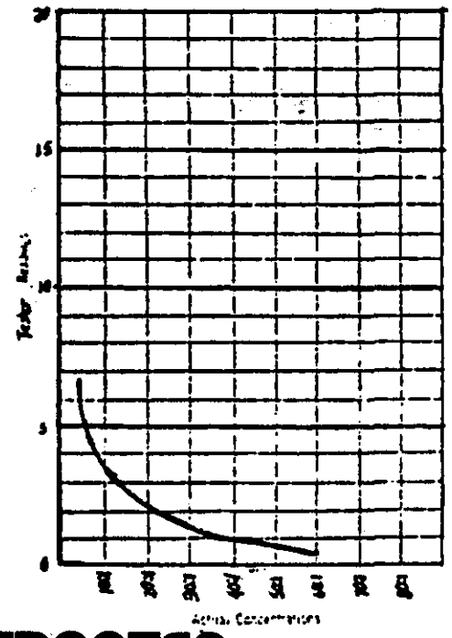
The values shown here are representative of typical laboratory tests of commercial production of VAN STRAATEN 71-081-B, and are not specifications for this product.

Flash Point, COC	None
Fire Point, COC	None
Flash Point after water evaporation, COC	300°F. (149°C)
API Gravity @ 60°F (15.5°C)	11.0 - 11.2
Specific Gravity @ 60°F (15.5°C)	0.99 - 0.993
Bulk Density @ 60°F (15.5°C)	8.3 lbs/gal. (0.991 Kg/L)
Viscosity @ 60°F (15.5°C)	380-340 SUS (60-73 cs)
Viscosity @ 100°F (38°C)	130-150 SUS (17-32 cs)
Pour Point	25°F (-4°C)
Total Sulfur, Calculated	0.15 - 0.16
Active Sulfur, Calculated	None
Total Chlorine, Calculated	None
pH of Concentrate	9.8 - 10.0
pH of Emulsion @ 20:1	9.5 - 9.7
pH of Emulsion @ 40:1	9.4 - 9.6

Use VAN STRAATEN 71-081-B for tube forming of ferrous and non ferrous alloys. Non-staining to aluminum and copper alloys.

CONCENTRATION CHECKS

Concentration checks by American Optical Company Fluid Tester, distributed by the Van Straaten Chemical Company. Refer to the conversion chart at right.



STORAGE AND HANDLING

Non-flammable, mildly alkaline solution. Spills may be washed away with water. Mild, non-irritating to the skin when used as directed in accordance with standard industrial practices.

DISPOSABILITY

Contains no phosphates, chlorine or active sulfur. See your Van Straaten Sales Engineer for information on industrial waste water treatment methods applicable to your area.

PACKAGING

In 55 gallon drums and tank trucks.

CPS:kc
102682

VAN STRAATEN
Chemical Company

VAN STRAATEN Chemical Company
630 W. Washington Blvd • Chicago IL 60606
(312) 454-1000 • Telex 25-3556

MATERIAL SAFETY DATA SHEET

I PRODUCT IDENTIFICATION

MANUFACTURER'S NAME	Van Straaten Chemical Co.	REGULAR TELEPHONE NO. EMERGENCY TELEPHONE NO.	312-454-1000
ADDRESS	630 W. Washington Blvd., Chicago, Ill. 60606		
TRADE NAME	Van Straaten 71-081-B		
SYNONYMS			

II HAZARDOUS INGREDIENTS

MATERIAL OR COMPONENT	%	HAZARD DATA
Petroleum Oil	17.0	TLV 5mg/M^3
Contains no other ingredients now known to be		
hazardous as defined in OSHA 29CFR1915.2		

III PHYSICAL DATA

BOILING POINT, 760 MM HG	N.A.	MELTING POINT	N.A.
SPECIFIC GRAVITY (H_2O = 1)	0.99 @ 60°F	VAPOR PRESSURE	ca. 20mm Hg @ 60°F
VAPOR DENSITY (AIR = 1)	ca. 0.6	SOLUBILITY IN H_2O, % BY WT.	Emulsifiable in all proportions.
% VOLATILES BY VOL.	ca. 50% (water)	EVAPORATION RATE (BUTYL ACETATE = 1)	less than one.
APPEARANCE AND ODOR	Blue, transparent liquid; mild odor	ph	Conc. 10.6 ± 0.1; 20/1 9.8 40/1 9.7 ± 0.1

IV FIRE AND EXPLOSION DATA

FLASH POINT (TEST METHOD)	COC: None	FIRE POINT (TEST METHOD	COC: None
FLAMMABLE LIMITS IN AIR % BY VOL.	LOWER: N.A.	UPPER:	N.A.
EXTINGUISHING MEDIA	CO_2, foam, dry chemical.		
SPECIAL FIRE FIGHTING PROCEDURES	In the event of water loss, residue will burn (flash point COC: 300°F min.). Treat as an oil fire.		
UNUSUAL FIRE AND EXPLOSION HAZARD	Complete combustion of residue may result in production of oxides of carbon, nitrogen and sulfur.		

V HEALTH HAZARD INFORMATION

HEALTH HAZARD DATA: Applies to concentrate. Hazard potential is reduced at use concentrations.

ROUTES OF EXPOSURE AND EFFECTS OF OVEREXPOSURE

INHALATION: TLV 5 mg/M^3 per ACGIH standard for oil mist.

SKIN CONTACT: Continued contact may cause skin irritation.

SKIN ABSORPTION: Not expected to be absorbed through skin.

EYE CONTACT: Will cause eye irritation.

INGESTION: LD_{50} not established. Product is not edible.

EMERGENCY AND FIRST AID PROCEDURES

EYES: Flush with copious amounts of water; consult a physician.

SKIN: Wash with soap and rinse with water.

INHALATION: If irritation occurs, remove victim to fresh air area and avoid further inhalation. Contact physician if necessary.

INGESTION:

NOTES TO PHYSICIAN

VI REACTIVITY DATA

CONDITIONS CONTRIBUTING TO INSTABILITY

Stable under normal use conditions.

INCOMPATIBILITY

Strong oxidizing agents; mineral acids.

HAZARDOUS DECOMPOSITION PRODUCTS

Complete combustion; oxides of carbon, nitrogen and sulfur.

CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION

NA.

VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

Flush small spills into waste disposal system or pick up with an oil absorbent.

NEUTRALIZING CHEMICALS

WASTE DISPOSAL METHOD

Non-biodegradable components of used emulsions must be removed prior to disposal. This may be accomplished by treating the used emulsion with acid-alum or alum-polymeri deemulsifiers and decanting off the oil split.

VIII SPECIAL PROTECTION INFORMATION

VENTILATION REQUIREMENTS

If product is sprayed or if misting occurs, provide local ventilation.

SPECIFIC PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY (SPECIFY IN DETAIL)

In the event of misting, use NIOSH approved respiratory equipment with TC-21C-140 cartridge combination.

EYE

Face shield or goggles when handling concentrate.

GLOVES

None

OTHER CLOTHING AND EQUIPMENT

None

IX SPECIAL PRECAUTIONS

PRECAUTIONARY STATEMENTS

OTHER HANDLING AND STORAGE REQUIREMENTS

Do not take internally.
Avoid contact with eyes.
Avoid breathing mists.
Wash contaminated clothing before reuse.
Keep drums closed when not in use.
Bring product to room temperature prior to use.

PREPARED BY: S.B.Hogenboom/cw Metal Forming Chemist

ADDRESS: Van Straaten Chemical Co.
630 W. Washington Blvd.
Chicago, Ill. 60606

DATE: 4/1/81

PENNWALT CORPORATION
CHEMICALS • EQUIPMENT • HEALTH PRODUCTS

900 First Avenue, P.O. Box C, King of Prussia, Pennsylvania 19406-0018 • (215) 337-6500

Double Action
Stretch Press

June 4, 1984

Mr. Ray Gamble
CAMPCO STEEL
57533 County Road 3
South Elkhart, IN 46517

Dear Mr. Gamble:

It was good speaking with you May 25th regarding the composition and disposal of our DP 1212.

Our product contains, in decreasing order of concentration, calcium carbonate and water (these two ingredients account for two-thirds of the product's composition), plus surfactants and soaps, 0.1% pine oil and less than 0.05% combined total of 4-(2-nitrobutyl) morpholine and 4-4^{1} - (2-ethyl-2-nitrotrimethylene) dimorpholine as a preservative.

The neat product has a $BOD_{5\ day}$ of 405,000 mg/L and a COD of 727,000 mg/L. It is not regarded as a hazardous waste water RCRA and is coded 0-0-0 under the NFPA system.

This information should be sufficient for disposal. If SCA Chemical Service needs more information regarding the ten drums of waste, they may, of course, call me directly.

I hope this has been of help. If I can do anything else, please don't hesitate to call.

Sincerely,

Charles Matlack
Product Safety Coordinator

CJM:lc

MATERIAL SAFETY DATA SHEET

PENNWALT

"ESSENTIALLY SIMILAR" TO OSHA FORM 20

FORM 4040 (Rev. 8-81)

ADDRESS: Pennwalt Corporation
900 First Avenue
King of Prussia, PA 19406

Emergency Phone Number(s)
Business: (215) 337-6639
Other:

PRODUCT IDENTIFICATION

Pennwalt Product Name: DP 1212

Pennwalt Code No.: CS 6272

Chemical Name and Molecular Formula:

CAS No.(s):

Synonyms:

Chemical Family: Lubricant

HAZARDOUS INGREDIENTS

MATERIALS OR COMPONENTS	% w/w	HAZARD DATA (TLV, LD50, LC50, etc.)
		Chuck Mattack

SHIPPING INFORMATION

Compound or Lubricant, Metal Cutting, Drawing or Drilling; Dry, Liquid or Paste, NOI

PHYSICAL PROPERTIES

Boiling Point/Range	Melting Point	Freezing Point	Molecular Weight (Calculated)
°C °F	°C °F	°C 30 °F	Mixture

Specific Gravity (H_2O=1)	Vapor Pressure (mm Hg)	Vapor Density (Air=1)
1.25 @ +/- 25 °C	@ °C °F	

Solubility in H_2O	% Volatiles by Volume	Evaporation Rate	Appearance and Odor	Other
Complete		☐ Ether = 1 ☐ Water = 1 ☐ Butylacetate = 1	Soft smooth opaque paste	

FIRE AND EXPLOSION DATA

Flash Point	Test Method	Flammable Limits	Autoignition Temperature/Fire Point
°C °F		Lower % Upper %	°C °F

EXTINGUISHING MEDIA

☐ Water-spray ☒ Water-fog ☐ Water stream ☒ CO_2 ☒ Dry chemical ☐ Alcohol foam ☒ Foam ☐ Earth or sand

SPECIAL FIRE FIGHTING PROCEDURES

☐ Do not enter building ☐ Allow fire to burn ☐ Water may cause frothing ☐ Do not use water

UNUSUAL FIRE AND EXPLOSION HAZARDS

☐ Dust explosion hazard ☐ Sensitive to shock ☐ Contamination ☐ Temperature ☐ Other (specify):

REACTIVITY DATA

STABILITY

☒ Stable ☐ Unstable

CONDITIONS CONTRIBUTING TO INSTABILITY

☐ Thermal decomposition ☐ Photo degradation ☐ Polymerization ☐ Contamination

INCOMPATIBILITY - Avoid contact with

☐ Strong acids ☐ Strong alkalis ☒ Strong oxidizers ☐ Other (specify):

HAZARDOUS DECOMPOSITION PRODUCTS - THERMAL AND OTHER (list)

Thermal - Oxides of Carbon

CONDITIONS TO AVOID

☐ Heat ☐ Open flames ☐ Sparks ☐ Ignition sources ☐ Other (specify):

SPILL OR LEAK

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

☐ Flush with water ☒ Absorb with sand or inert material ☐ Neutralize ☐ Sweep or scoop up and remove ☐ Keep upwind. Evacuate enclosed spaces. ☐ Prevent spread or spill

☐ Dispose of immediately ☐ Other (specify):

WASTE DISPOSAL METHOD - *Consult federal, state, or local authorities for proper disposal procedures.*

CONTINUED ON REVERSE SIDE ▶

NA – Not Applicable.

Material Safety Data Sheet

NUCOR

CARBON & ALLOY STEELS

Issue Date: November 25, 1985

I. PRODUCT IDENTIFICATION

Company: Nucor Steel - Darlington, P. O. Box 525, Darlington, S. C. 29532
Trade Name (Common or Synonym): Carbon and Alloy Steels
Chemical Name: AISI/SAE Grades 10XX through 93XX, A-36, A-36M, A-572, A-441, A-242, A-588, A-675
Form: Angle, Channel, Round, Flat
Emergency Telephone: (803) 393-5841 or nearest Poison Control Center

II. PRODUCT INGREDIENTS

Material or Component	CAS Number	% Weight	Exposure Limits OSHA PEL (mg/m³)	Exposure Limits ACGIH TLV (mg/m³)
Base Metal				
Iron (Fe)	7439-89-6	86.5-99.5	10 Oxide Fume	5 Oxide Fume
Alloying Elements				
Aluminum (Al)	7429-90-5	<0.1-0.5	Not Established	10 Dust/5 Fume
Bismuth (Bl)	7440-69-9	<0.2-0.5	Not Established	Not Established
Boron (B)	7440-42-8	<.01-1.0	15 Oxide Fume	10 Oxide Fume
Carbon (C)	7440-44-0	<.10-1.5	Not Established	Not Established
Chromium (Cr)	7440-47-3	<.40-10	1.0 Chrome Metal	0.5 Chrome Metal
Columbium (Cb)	7440-25-7	<.15-.35	Not Established	Not Established
Copper (Cu)	7440-50-8	<.30-1.90	0.1 Fume/1.0 Dust	0.2 Fume/1.0 Dust
Lead (Pb)	7439-92-1	<.01-.15	.05 Dust & Fume	.15 Dust & Fume
Manganese (Mn)	7439-96-5	<.04-0.7	5c Dust/5c Fume	5c Dust/1 Fume
Molybdenum (Mo)	7439-98-7	<.15-1.10	15 Insoluble Compounds	10 Insoluble Compounds
Nickel (Ni)	7440-02-0	<.01-10	1 Nickel Metal	1 Nickel Metal
Phosphorous (P)	7723-14-0	<.040-.12	0.1 Phosphorous	0.1 Phosphorous
Silicon (Si)	7440-21-3	<.15-2.00	Not Established	10 Total Dust
Sulfur (S)	7704-34-9	<.050-.35	13 Sulfur Dioxide	5 Sulfur Dioxide
Vanadium (V)	7440-62-2	<.01-0.15	0.5c Dust/0.1c Fume	0.05 Dust/0.05 Fume

Note: The above listing is a summary of elements used in alloying steel. Various grades of steel will contain different combinations of these elements. Trace elements may also be present in minute amounts. No permissible exposure limits (PEL) or threshold limit values (TLV) exist for steel. Values shown are applicable to component elements.

III. PHYSICAL DATA

Physical Form: Solid under normal conditions
Appearance & Odor: Gray-black or Silver-gray odorless metal
Specific Gravity (H_2O = 1): Approx. 7
Melting Point: Approx. 2800°F
Solubility in Water: (% by weight): Not applicable
Boiling Point: Not applicable
Vapor Pressure: Not applicable
Vapor Density: Not applicable
Acidity/Alkalinity: Not applicable
% Volitile by Volume: Not applicable

IV. FIRE AND EXPLOSION DATA

Flash Point: Not applicable – **Auto-Ignition Temperature:** Not applicable – **Flammable Limits in Air:** Not applicable
Fire & Explosion Hazards-Extinguishing Media: Steel bars and tubular products do not present fire or explosion hazards under normal conditions. Use fire fighting methods and materials that are appropriate for surrounding fire.

Fine metal particles, such as produced in grinding and sawing, can burn. High concentration of metallic fines in the air may present an explosion hazard. Molten metal may explode on contact with water. For these fires, use dry powder or sand extinguishing media.

V. ENVIRONMENTAL HEALTH & SAFETY INFORMATION

HEALTH HAZARDS:

Steel products in their solid state present no inhalation, ingestion, or contact health hazard. Operations such as burning, welding, sawing, brazing, grinding, and machining, which result in elevating the temperature of the product to, or above its melting point, or result in the generation of airborne particulates may present hazards. The major exposure hazard is inhalation. Effects of overexposure to fume and dust are as follows:

Acute: Excessive inhalation of metallic fumes and dusts may result in irritation of eyes, nose and throat. High concentrations of fumes and dusts of iron-oxide, manganese, copper, zinc, and lead may result in metal fume fever. Typical symptoms last from 12 to 48 hours and consist of a metallic taste in the mouth, dryness and irritation of the throat, chills and fever.

Chronic: Chronic and prolonged inhalation of high concentrations of fumes or dust of the following elements may lead to the conditions listed opposite the element:

Aluminum: May initiate fibrotic changes to lung tissue
Bismuth: No chronic debilitating symptoms indicated
Boron: No chronic debilitating symptoms indicated
Chromium: Lesions of the skin and mucous membranes, possibly cancer of the nose or lungs-bronchogenic carcinoma
Copper: No chronic debilitating symptoms indicated
Iron: Siderosis, pulmonary effects. No chronic debilitating symptoms indicated
Lead: Anemia, urinary dysfunction, weakness, constipation, nausea, nervous disorder
Manganese: Bronchitis, pneumonitis, lack of coordination
Molybdenum: Respiratory tract irritation, possible liver and kidney damage, bone deformity
Nickel: Lesions of the skin and mucous membranes, possibly cancer of the nose or lungs-bronchogenic carcinoma
Phosphorous: Necrosis of the mandible
Sulfur (as sulfur dioxide): Edema of the lungs
Vanadium: (As vanadium pentoxide) Emphysema, pneumonia
Zinc: Gastrointestinal inflamation reported in animal studies

Occupational Exposure Limits: See products Ingredients Section II. Chromium and Nickel have been identified by the International Agency for Research on Cancer (IARC) and/or the National Toxicology Program (NTP) as potential cancer causing agents.

EMERGENCY MEDICAL PROCEDURES:

Inhalation: Remove to fresh air; if condition continues, consult a physician.
Eye Contact: Flush thoroughly with running water to remove particulate; obtain medical attention.
Skin Contact: Remove particles by washing thoroughly with soap and water. Seek medical attention if condition persists.
Ingestion: If significant amounts of metal are ingested, consult physician.

OCCUPATIONAL PROTECTIVE MEASURES:

Respiratory Protection: Appropriate dust/mist/fume respirator should be used to avoid excessive inhalation of particulates. If exposure limits are reached or exceeded, use NIOSH approved equipment.
Hands, Arms, and Body: Protective gloves should be worn as required for welding, burning or handling operations.
Eyes and Face: Safety glasses should be worn when grinding or cutting.
Face shields should be worn when welding or burning.
Other Clothing and Equipment: As required depending on operations and safety codes.

REACTIVITY INFORMATION

Stability: Stable under normal conditions of use, storage and transportation.
Incompatibility (Materials to Avoid): Reacts with strong acids to form hydrogen gas.
Conditions to Avoid: Steel at temperatures above the melting point may liberate fumes containing oxides of iron and alloying elements. Avoid generation of airborn fume and dust.

SPILL, LEAK & DISPOSAL METHODS:

Fine turnings and small chips should be swept or vacuumed. Scrap metal can be reclaimed for reuse.
Used or unused product should be disposed of in accordance with federal, state, or local laws and regulations.

ADDITIONAL PRECAUTIONS:

Minimize and control operations producing dust and fume.
Provide adequate exhaust ventilation and maintain good housekeeping.

DISCLAIMER

PREPARED BY DISTRIBUTOR:

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SECTION 1 - PRODUCT IDENTIFICATION

MANUFACTURER'S NAME: Various

PRODUCT NAME / TRADE NAME	COMMON NAME / GRADE
Stainless Steel	3XX Series, 4XX Series

SECTION 2 - HAZARDOUS INGREDIENTS

NOTE PRODUCTS UNDER NORMAL CONDITIONS DO NOT REPRESENT AN INHALATION, INGESTION OR CONTACT HEALTH HAZARD

BASE METAL, ALLOYING ELEMENTS AND METALLIC COATINGS	% COMPOSITION BY WEIGHT (1)	ACGIH TLV (mg/m^3) (2)
Base Metal		
Iron (Fe)	60-88	5 (As Iron Oxide)
Alloying Elements		
Chromium (Cr)	10-30	.5
Nickel (Ni)	0-27	1
Manganese (Mn)	<6	5 (As Dust-Ceiling)
Molybdenum (Mo)	<6	10 (Insoluble Compound)
Copper (Cu)	<6	1 (Dust & Mist)
Titanium (Ti)	<6	10 (Total Dust)
Carbon (C)	<2	None Established
Phosphorus (P)	<2	None Established
Sulfur (S)	<2	5 (As SO_2)
Silicon (Si)	<2	10 (Total Dust)
Cobalt (Co)	<2	.1 (Dust & Fume)
Niobium (Nb)	<2	None Established
Nitrogen (N)	<2	6 (As NO_2)
Tin (Sn)	<2	2

(1) % OF ALLOYING MATERIAL VARIES WITH GRADE OF MATERIAL.

(2) 1985-1986 ACGIH THRESHOLD LIMIT VALUE.

SECTION 3 - PHYSICAL DATA

MATERIAL IS (AT NORMAL CONDITIONS)	APPEARANCE AND ODOR
Solid	Gray-Black, Odorless
MELTING POINT (BASE METAL)	**SPECIFIC GRAVITY**
>2500	Approximately 7

SECTION 4 - FIRE AND EXPLOSION

EXTINGUISHING MEDIA: NA

SPECIAL FIRE FIGHTING PROCEDURES

Steel products in the solid state present no fire or explosion hazard.

UNUSUAL FIRE AND EXPLOSION HAZARDS

NA

SECTION 5 - REACTIVITY DATA

STABILITY	INCOMPATABILITY (MATERIALS TO AVOID)
Stable	Reacts with strong acids to produce hydrogen gas.

CONDITIONS TO AVOID: NA

HAZARDOUS DECOMPOSITION PRODUCTS

Metallic dust or fumes may be produced during welding, burning, grinding and possibly machining. Refer to ANSI Z49.1

CM 0829-A

PRODUCT: Stainless

SECTION 6 - HEALTH HAZARD DATA

NOTE: STEEL PRODUCTS IN THE NATURAL STATE DO NOT PRESENT AN INHALATION, INGESTION OR CONTACT HAZARD. HOWEVER, OPERATIONS SUCH AS BURNING, WELDING, SAWING, BRAZING AND GRINDING MAY RELEASE FUMES AND/OR DUSTS WHICH MAY PRESENT HEALTH HAZARDS IF TLV'S ARE EXCEEDED.

MAJOR EXPOSURE HAZARD:

☒ INHALATION ☐ SKIN CONTACT ☐ SKIN ABSORPTION ☐ EYE CONTACT ☐ INGESTION

EFFECTS OF OVEREXPOSURE

Short term exposure to fumes/dust may produce irritation of eyes and respiratory system. Inhalation of high concentrations of freshly formed oxide fumes or iron, manganese and copper may cause metal fume fever characterized by a metallic taste in the mouth, dryness and irritation of the throat and influenza-like symptoms.

Chronic inhalation of high concentrations of iron oxide fumes or dust may lead to a benign pneumoconiosis (siderosis). Inhalation of high concentrations of ferric oxide may possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.

Chromium and nickel and their compounds are listed in the 3rd Annual Report on carcinogens, as prepared by the National Toxicology Program (NTP). Exposure to high concentrations of dust and fumes can cause sensitization dermatitis, inflammation and/or ulceration of upper respiratory tract and possibly cancer of nasal passages and lungs.

Recent epidemiological studies of workers melting and working alloys containing nickel/chromium have found no increased risk of cancer.

EMERGENCY AND FIRST AID PROCEDURES

If exposed to excessive levels of metal fumes, remove to fresh air, seek medical aid immediately.

Eyes - Flush with water for at least 15 minutes.

SECTION 7 - SPILL OR LEAK PROCEDURES

SPILL OR LEAK PROCEDURES

WASTE DISPOSAL METHODS

According to local, state and federal regulations.

SECTION 8 - SPECIAL PROTECTION

RESPIRATORY

NIOSH/MSHA - Approved dust and fume, respirator should be used to avoid excessive inhalation of particulates when exposure exceeds TLV's.

VENTILATION

Local exhaust ventilation should be utilized when welding, burning, sawing, brazing, grinding or machining when exposure exceeds TLV's.

EYE PROTECTION AND PROTECTIVE CLOTHING

Safety glasses or goggles should be utilized as required by exposure. Other protective equipment should be utilized as required by the welding standards.

SECTION 9 - SPECIAL PRECAUTIONS

In welding, precautions should be taken for airborne contaminants which may originate from components of the welding rod.

Arc or spark generated when welding or burning could be a source of ignition for combustable and flammable materials.

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SECTION 1 - PRODUCT IDENTIFICATION

MANUFACTURER'S NAME: Various

PRODUCT NAME / TRADE NAME	COMMON NAME / GRADE
Aluminum Alloys Aluminum Alloys Containing Lead	1XXX thru 7XXX Series Leaded 2011 & 6262

SECTION 2 - HAZARDOUS INGREDIENTS

NOTE: PRODUCTS UNDER NORMAL CONDITIONS DO NOT REPRESENT AN INHALATION, INGESTION OR CONTACT HEALTH HAZARD.

BASE METAL, ALLOYING ELEMENTS AND METALLIC COATINGS	% COMPOSITION BY WEIGHT (1)	ACGIH TLV (mg/m³) (2)
Base Metal		
Aluminum (Al)	80-99.7	10 (Metal & Oxide)
Alloying Elements		
Copper (Cu)	<10	1 (Dust & Mist)
Magnesium (Mg)	<10	10
Zinc (Zn)	<10	10 (Total Dust)
Cobalt (Co)	<2	.1 (Dust & Fume)
Iron (Fe)	<2	5 (As Iron Oxide)
Manganese (Mn)	<2	5 (As Dust-Ceiling)
Silicon (Si)	<2	10 (Total Dust)
Tin (Sn)	<2	2
Chromium (Cr)	<.5	.5
Nickel (Ni)	<.5	1
Leaded Alloys 2011 & 6262		
Lead (Pb)	<1	.05 (OSHA Lead Std.)

(1) % OF ALLOYING MATERIAL VARIES WITH GRADE OF MATERIAL.

(2) 1985-1986 ACGIH THRESHOLD LIMIT VALUE.

SECTION 3 - PHYSICAL DATA

MATERIAL IS (AT NORMAL CONDITIONS)	APPEARANCE AND ODOR
Solid	Silver-Metallic, Odorless
MELTING POINT (BASE METAL)	**SPECIFIC GRAVITY**
440-1220	>2

SECTION 4 - FIRE AND EXPLOSION

EXTINGUISHING MEDIA: Dry Powder (Class D) or Sand

SPECIAL FIRE FIGHTING PROCEDURES: Do not use water or halogen on dust fires.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Damp aluminum dust may spontaneously heat with liberation of hydrogen to form explosive mixtures. Molten may explode on contact with water.

SECTION 5 - REACTIVITY DATA

STABILITY	INCOMPATABILITY (MATERIALS TO AVOID)
Stable	Anhydrous Bromine. Also see NFPA #491M
CONDITIONS TO AVOID	
See Special Precautions.	See Fire and Explosion Section.
HAZARDOUS DECOMPOSITION PRODUCTS	
See Special Precautions.	See Fire and Explosion Section.

PRODUCT: Aluminum

SECTION 6 - HEALTH HAZARD DATA

NOTE: STEEL PRODUCTS IN THE NATURAL STATE DO NOT PRESENT AN INHALATION, INGESTION OR CONTACT HAZARD. HOWEVER, OPERATIONS SUCH AS BURNING, WELDING, SAWING, BRAZING AND GRINDING MAY RELEASE FUMES AND/OR DUSTS WHICH MAY PRESENT HEALTH HAZARDS IF TLV'S ARE EXCEEDED.

MAJOR EXPOSURE HAZARD:

☒ INHALATION ☒ SKIN CONTACT ☐ SKIN ABSORPTION ☐ EYE CONTACT ☒ INGESTION

EFFECTS OF OVEREXPOSURE

Aluminum dust should be treated as a nuisance dust and high exposure may produce irritation of eyes and respiratory system. The potential for overexposure to copper fume may exist when welding, flame cutting, etc. on alloys containing high amounts of copper >2.5%. These alloys include 2XXX, 7XXX and 4145 wrought alloys. Overexposure to copper fume can result in respiratory irritation, nausea and metal fume fever.

Nickel and chromium are contained in certain alloys at levels of 0.1% or more. Chromium and nickel and their compounds are listed in the 3rd Annual Report on Carcinogens, as prepared by the National Toxicology Program (NTP). Their presence in Aluminum alloys, however, should not present a carcinogenic or health concern due to either their low concentrations or the chemical form in which they are present.

Inhalation or ingestion of lead particles may result in lead-induced systemic toxicity. Symptoms of lead poisoning include abdominal cramps, anemia, muscle weakness and headache. Prolonged exposure can cause behavioral changes, kidney damage, CNS damage and reproductive effects.

Plasma arc cutting or welding aluminum can generate ozone. Overexposures to ozone can result in mucous membrane irritation, as well as pulmonary changes including irritation, congestion and edema.

EMERGENCY AND FIRST AID PROCEDURES

If exposed to excessive levels of metal fumes, remove to fresh air, seek medical aid immediately.

Eyes - Flush with water for at least 15 minutes.

SECTION 7 - SPILL OR LEAK PROCEDURES

SPILL OR LEAK PROCEDURES

WASTE DISPOSAL METHODS

According to local, state and federal regulations.

SECTION 8 - SPECIAL PROTECTION

RESPIRATORY

NIOSH/MSHA - Approved dust and fume, respirator should be used to avoid excessive inhalation of particulates when exposure exceeds TLV's.

VENTILATION

Local exhaust ventilation should be utilized when welding, burning, sawing, brazing, grinding or machining when exposure exceeds TLV's.

EYE PROTECTION AND PROTECTIVE CLOTHING

Safety glasses or goggles should be utilized as required by exposure. Other protective equipment should be utilized as required by the welding standards.

SECTION 9 - SPECIAL PRECAUTIONS

1. Halogen acids and sodium hydroxide in contact with aluminum may generate mixtures of hydrogen.
2. Finely divided aluminum will form explosive mixtures in air. It will also form explosive mixtures in air in the presence of bromates, iodates or ammonium nitrate.
3. When remelting aluminum scrap, entrapped moisture or the presence of strong oxidizers such as ammonium nitrate could cause an explosion. This applies to the collection of moisture in tow cavities as well. Moisture must be driven off prior to remelting.
4. Do not touch cast aluminum metal or heated aluminum product without knowing metal temperature. Aluminum experiences no color change during heating. If metal is hot and touched, burns can result.
5. Hard alloy ingots in the 2000 and 7000 series must be stress-relieved to prevent explosion when sawed.
6. The welding of aluminum alloys may generate carbon monoxide, carbon dioxide, ozone, nitrogen oxides, infra-red radiation and ultra-violet radiation.

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SECTION 1 - PRODUCT IDENTIFICATION

MANUFACTURER'S NAME: Various

PRODUCT NAME / TRADE NAME	COMMON NAME / GRADE
Carbon Steel - HR & CR Leaded Carbon	Carbon Steel i.e. A36,1018,1010,1040 Pressure Vessel Quality Leaded Carbon i.e. 10L42

SECTION 2 - HAZARDOUS INGREDIENTS

NOTE PRODUCTS UNDER NORMAL CONDITIONS DO NOT REPRESENT AN INHALATION, INGESTION OR CONTACT HEALTH HAZARD.

BASE METAL, ALLOYING ELEMENTS AND METALLIC COATINGS	% COMPOSITION BY WEIGHT (1)	ACGIH TLV (mg/m^3) (2)
Base Metal		
Iron	97-99	5 (As Iron Oxide)
Alloying Elements		
Manganese (Mn)	<2	5 (As Dust-Ceiling)
Carbon (C)	<2	None Established
Aluminum (Al)	<1	10
Phosphorus (P)	<1	None for Inorganic
Sulfur (S)	<1	5 (As SO_2)
Silicon (Si)	<1	10 (Total Dust)
Vanadium (V)	<1	.05 (As Respirable Dust)
Colombian (Cb)	<1	None Established
Bismuth (Bi)	<1	None Established
Lead Carbon i.e. 10L42		
Lead (Pb)	<1	.05 (OSHA Lead Std.)

(1) % OF ALLOYING MATERIAL VARIES WITH GRADE OF MATERIAL.

(2) 1985-1986 ACGIH THRESHOLD LIMIT VALUE.

SECTION 3 - PHYSICAL DATA

MATERIAL IS (AT NORMAL CONDITIONS)	APPEARANCE AND ODOR
Solid	Gray-Black, Odorless
MELTING POINT (BASE METAL)	**SPECIFIC GRAVITY**
>2500°	Approximately 7

SECTION 4 - FIRE AND EXPLOSION

EXTINGUISHING MEDIA: NA

SPECIAL FIRE FIGHTING PROCEDURES: Steel products in the solid state present no fire or explosion hazard.

UNUSUAL FIRE AND EXPLOSION HAZARDS: NA

SECTION 5 - REACTIVITY DATA

STABILITY	INCOMPATABILITY (MATERIALS TO AVOID)
Stable	Reacts with strong acids to produce hydrogen gas.

CONDITIONS TO AVOID: NA

HAZARDOUS DECOMPOSITION PRODUCTS: Metallic dust or fumes may be produced during welding, burning, grinding and possibly machining. Refer to ANSI Z49.1

PRODUCT Carbon

SECTION 6 - HEALTH HAZARD DATA

NOTE: STEEL PRODUCTS IN THE NATURAL STATE DO NOT PRESENT AN INHALATION, INGESTION OR CONTACT HAZARD. HOWEVER, OPERATIONS SUCH AS BURNING, WELDING, SAWING, BRAZING AND GRINDING MAY RELEASE FUMES AND/OR DUSTS WHICH MAY PRESENT HEALTH HAZARDS IF TLV'S ARE EXCEEDED.

MAJOR EXPOSURE HAZARD:

☒ INHALATION ☒ SKIN CONTACT ☐ SKIN ABSORPTION ☐ EYE CONTACT ☒ INGESTION

EFFECTS OF OVEREXPOSURE

Short term exposure to fumes/dust may produce irritation of eyes and respiratory system. Inhalation of high concentrations of freshly formed oxide fumes of iron, manganese, and lead may cause metal fume fever, characterized by a metallic taste in the mouth, dryness and irritation of the throat and influenza-like symptoms.

Chronic inhalation of high concentrations of iron oxide fumes or dust may lead to benign pneumoconiosis (siderosis). Inhalation of high concentrations of ferric oxide may possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.

Inhalation or ingestion of lead particles may result in lead-induced systemic toxicity. Symptoms of lead poisoning include abdominal cramps, anemia, muscle weakness and headache. Prolonged exposure can cause behavioral changes, kidney damage, CNS damage and reproductive effects.

EMERGENCY AND FIRST AID PROCEDURES

If exposed to excessive levels of metal fumes, remove to fresh air, seek medical aid immediately.

Eyes - Flush with water for at least 15 minutes.

SECTION 7 - SPILL OR LEAK PROCEDURES

SPILL OR LEAK PROCEDURES

WASTE DISPOSAL METHODS

According to local, state and federal regulations.

SECTION 8 - SPECIAL PROTECTION

RESPIRATORY

NIOSH/MSHA - Approved dust and fume, respirator should be used to avoid excessive inhalation of particulates when exposure exceeds TLV's.

VENTILATION

Local exhaust ventilation should be utilized when welding, burning, sawing, brazing, grinding or machining when exposure exceeds TLV's.

EYE PROTECTION AND PROTECTIVE CLOTHING

Safety glasses or goggles should be utilized as required by exposure. Other protective equipment should be utilized as required by the welding standards.

SECTION 9 - SPECIAL PRECAUTIONS

In welding, precautions should be taken for airborne contaminants which may originate from components of the welding rod.

Arc or spark generated when welding or burning could be a source of ignition for combustable and flammable materials.

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SECTION 1 - PRODUCT IDENTIFICATION

MANUFACTURER'S NAME: Various

PRODUCT NAME / TRADE NAME	COMMON NAME / GRADE
Copper - CR & HR Copper Leadtex Sheet	Copper Sheet, Oxygen Free, Hard Drawn Electrolytic Tough Pitch

SECTION 2 - HAZARDOUS INGREDIENTS

NOTE: PRODUCTS UNDER NORMAL CONDITIONS DO NOT REPRESENT AN INHALATION, INGESTION OR CONTACT HEALTH HAZARD.

BASE METAL, ALLOYING ELEMENTS AND METALLIC COATINGS	% COMPOSITION BY WEIGHT (1)	ACGIH TLV (mg/m^3) (2)
Copper (Cu)	>99.9	1 (Dust & Mist)
Trace Less Than .1% Phosphorus, Antimony, Selenium Bismuth		
Coating - Leadtex		
Lead (Pb)	15 lbs./100 sq ft	.05 (OSHA Lead Std.)

(1) % OF ALLOYING MATERIAL VARIES WITH GRADE OF MATERIAL.

(2) 1985-1986 ACGIH THRESHOLD LIMIT VALUE.

SECTION 3 - PHYSICAL DATA

MATERIAL IS (AT NORMAL CONDITIONS)	APPEARANCE AND ODOR
Solid	Copper Metallic, Odorless
MELTING POINT (BASE METAL)	**SPECIFIC GRAVITY**
>1800°	>8

SECTION 4 - FIRE AND EXPLOSION

EXTINGUISHING MEDIA: NA

SPECIAL FIRE FIGHTING PROCEDURES: Products in the solid state present no fire or explosion hazard.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Dust hazard exists under favoring conditions of small practice size. Dispersion in air and strong ignition source may result in an explosion.

SECTION 5 - REACTIVITY DATA

STABILITY	INCOMPATABILITY (MATERIALS TO AVOID)
Stable	Mercury, Ammonia, Acetylene, Acids

CONDITIONS TO AVOID: Exposure during storage to strong acids, bases or oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Toxic gases, aerosols and vapors may be released in a fire involving copper alloys if fumes of other compounds or other contacting materials are involved.

PRODUCT Copper

SECTION 6 - HEALTH HAZARD DATA

NOTE: STEEL PRODUCTS IN THE NATURAL STATE DO NOT PRESENT AN INHALATION, INGESTION OR CONTACT HAZARD. HOWEVER, OPERATIONS SUCH AS BURNING, WELDING, SAWING, BRAZING AND GRINDING MAY RELEASE FUMES AND/OR DUSTS WHICH MAY PRESENT HEALTH HAZARDS IF TLV'S ARE EXCEEDED.

MAJOR EXPOSURE HAZARD:

☒ INHALATION ☒ SKIN CONTACT ☐ SKIN ABSORPTION ☐ EYE CONTACT ☒ INGESTION

EFFECTS OF OVEREXPOSURE

Short term exposure to fumes/dust may produce irritation of eyes and respiratory system. Inhalation of high concentrations of freshly formed oxide fumes of copper and lead may cause metal fume fever characterized by a metallic taste in the mouth and irritation of the throat and influenza-like symptoms.

Inhalation or ingestion of lead particles may result in lead-induced systemic toxicity. Symptoms of lead poisoning include abdominal cramps, anemia, muscle weakness and headache. Prolonged exposure can cause behavioral changes, kidney damage, CNS damage and reproductive effects.

EMERGENCY AND FIRST AID PROCEDURES

If exposed to excessive levels of metal fumes, remove to fresh air, seek medical aid immediately.

Eyes - Flush with water for at least 15 minutes.

SECTION 7 - SPILL OR LEAK PROCEDURES

SPILL OR LEAK PROCEDURES

WASTE DISPOSAL METHODS

According to local, state and federal regulations.

SECTION 8 - SPECIAL PROTECTION

RESPIRATORY

NIOSH/MSHA - Approved dust and fume, respirator should be used to avoid excessive inhalation of particulates when exposure exceeds TLV's.

VENTILATION

Local exhaust ventilation should be utilized when welding, burning, sawing, brazing, grinding or machining when exposure exceeds TLV's.

EYE PROTECTION AND PROTECTIVE CLOTHING

Safety glasses or goggles should be utilized as required by exposure. Other protective equipment should be utilized as required by the welding standards.

SECTION 9 - SPECIAL PRECAUTIONS

In welding, precautions should be taken for airborne contaminants which may originate from components of the welding rod.

Arc or spark generated when welding or burning could be a source of ignition for combustable and flammable materials.

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SECTION 1 - PRODUCT IDENTIFICATION

MANUFACTURER'S NAME: Various

PRODUCT NAME / TRADE NAME	COMMON NAME / GRADE
Alloy Steel - HR & CR Alloy Leaded Steel	Alloy Steel i.e. 4130,4140,4340,8620 Alloy Leaded i.e. 86L20

SECTION 2 - HAZARDOUS INGREDIENTS

NOTE: PRODUCTS UNDER NORMAL CONDITIONS DO NOT REPRESENT AN INHALATION, INGESTION OR CONTACT HEALTH HAZARD.

BASE METAL, ALLOYING ELEMENTS AND METALLIC COATINGS	% COMPOSITION BY WEIGHT (1)	ACGIH TLV (mg/m^3) (2)
Base Metal		
Iron (Fe)	86-99	5 (As Iron Oxide)
Alloying Elements		
Nickel (Ni)	<5	1
Chromium (Cr)	<5	.5
Silicon (Si)	<5	10 (Total Dust)
Manganese (Mn)	<2	5 (As Dust-Ceiling)
Carbon (C)	<2	None Established
Molybdenum (Mo)	<2	10 (Insoluble Compound)
Vanadium (V)	<2	10 (Total Dust)
Aluminum (Al)	<2	10
Sulfur (S)	<2	5 (As SO_2)
Phosphorus (P)	<1	None Established
Bismuth (Bi)	<1	None Established
Copper (Cu)	<1	1 (Dust & Mist)
Leaded Alloy		
Lead (Pb)	<1	.05 (OSHA Lead Std.)

(1) % OF ALLOYING MATERIAL VARIES WITH GRADE OF MATERIAL.

(2) 1985-1986 ACGIH THRESHOLD LIMIT VALUE.

SECTION 3 - PHYSICAL DATA

MATERIAL IS (AT NORMAL CONDITIONS)	APPEARANCE AND ODOR
Solid	Gray-Black, Odorless
MELTING POINT (BASE METAL)	**SPECIFIC GRAVITY**
>2500°	Approximately 7

SECTION 4 - FIRE AND EXPLOSION

EXTINGUISHING MEDIA: NA

SPECIAL FIRE FIGHTING PROCEDURES: Steel products in the solid state present no fire or explosion hazard.

UNUSUAL FIRE AND EXPLOSION HAZARDS: NA

SECTION 5 - REACTIVITY DATA

STABILITY	INCOMPATABILITY (MATERIALS TO AVOID)
Stable	Reacts with strong acids to provide hydrogen gas.

CONDITIONS TO AVOID: NA

HAZARDOUS DECOMPOSITION PRODUCTS: Metallic dust or fumes may be produced during welding, burning, grinding and possibly machining. Refer to ANSI Z49.1

PRODUCT: Alloy

SECTION 6 - HEALTH HAZARD DATA

NOTE: STEEL PRODUCTS IN THE NATURAL STATE DO NOT PRESENT AN INHALATION, INGESTION OR CONTACT HAZARD. HOWEVER, OPERATIONS SUCH AS BURNING, WELDING, SAWING, BRAZING AND GRINDING MAY RELEASE FUMES AND/OR DUSTS WHICH MAY PRESENT HEALTH HAZARDS IF TLV'S ARE EXCEEDED.

MAJOR EXPOSURE HAZARD:

☒ INHALATION ☒ SKIN CONTACT ☐ SKIN ABSORPTION ☐ EYE CONTACT ☒ INGESTION

EFFECTS OF OVEREXPOSURE

Short term exposure to fumes/dust may produce irritation of eyes and respiratory system. Inhalation of high concentrations of freshly formed oxide fumes of iron, manganese, copper and lead may cause metal fume fever, characterized by a metallic taste in the mouth, dryness and irritation of the throat and influenza-like symptoms.

Chronic inhalation of high concentrations of iron oxide fumes or dust may lead to a benign pneumoconiosis (siderosis). Inhalation of high concentrations of ferric oxide may possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.

Inhalation or ingestion of lead particles may result in lead induced systemic toxicity. Symptoms of lead poisoning include abdominal cramps, anemia, muscle weakness and headache. Prolonged exposure can cause behavioral changes, kidney damage, CNS damage and reproductive effects.

Chromium and nickel and their compounds are listed in the 3rd Annual Report on carcinogens, as prepared by the National Toxicology Program (NTP). Exposure to high concentrations of dust and fumes can cause sensitization dermatitus, inflammation and/or ulceration of upper respiratory tract and possible cancer of nasal passages and lungs.

Recent epidemiological studies of workers melting and working alloys containing nickel/chromium have found no increased risk of cancer.

EMERGENCY AND FIRST AID PROCEDURES

If exposed to excessive levels of metal fumes, remove to fresh air, seek medical aid immediately.

Eyes - Flush with water for at least 15 minutes.

SECTION 7 - SPILL OR LEAK PROCEDURES

SPILL OR LEAK PROCEDURES

WASTE DISPOSAL METHODS

According to local, state and federal regulations.

SECTION 8 - SPECIAL PROTECTION

RESPIRATORY: NIOSH/MSHA - Approved dust and fume, respirator should be used to avoid excessive inhalation of particulates when exposure exceeds TLV's.

VENTILATION: Local exhaust ventilation should be utilized when welding, burning, sawing, brazing, grinding or machining when exposure exceeds TLV's.

EYE PROTECTION AND PROTECTIVE CLOTHING

Safety glasses or goggles should be utilized as required by exposure. Other protective equipment should be utilized as required by the welding standards.

SECTION 9 - SPECIAL PRECAUTIONS

In welding, precautions should be taken for airborne contaminants which may originate from components of the welding rod.

Arc or spark generated when welding or burning could be a source of ignition for combustable and flammable materials.

ELKHART STEEL SERVICE, INC.

23321 COUNTY ROAD 106 — ELKHART, INDIANA 46514-9786 — PHONE (219) 262-2552

Material Safety Data Sheet

Company	Issue Date	Identification Number
Elkhart Steel Service Inc. 23321 County Road 106 Elkhart, IN 46514	November 21, 1985	C Alloy & Tool
Trade Name (Common Name or Synonym) Carbon, Alloy, and Tool Steels	**Emergency Phone Number** (219) 262 - 2552	
Chemical Name Steel	**Form** Bar, Sheet, Plate, Tubing, Structurals, and Forgings	

I. INGREDIENTS

Material or Component	CAS Number	% Weight	Exposure Limits	
			OSHA PEL (mg/m³)	ACGIH TLV (mg/m³)
Base Metal				
Iron (Fe)	7439-89-6	Balance	10 (Fe_2O_3 Fume)	5.0 (Fe_2O_3 Fume)
Alloying Elements				
Aluminum (Al)	7429-90-5	0.10 - 1.8	None Listed	5.0 as welding fume
Carbon (C)	7440-44-0	0.01 - 1.5	None Listed	None Listed
Chromium (Cr)	7440-47-3	0.01 - 12	1.0 as chrome	0.5 as chrome
Cobalt (Co)	7440-48-4	8 Max.	0.1 as cobalt and fume	0.05 as fume
Copper (Cu)	7440-50-8	0.04 - 0.7	0.2 as copper; 1.0 as dust	0.2 as fume; 1.0 as dust
Lead (Pb)	7439-92-1	0.15 - 0.35	0.05 as fume & dust	0.15 as dust and fume
Manganese (Mn)	7439-96-5	0.05 - 2.0	5 as manganese	5 as dust; 1 as fume
Molybdenum (Mo)	7439-98-7	0.01 - 1.10	15 as insoluble compds	10 as insoluble compds
Nickel (Ni)	7440-02-0	0.01 - 10	1.0 as Nickel	1.0 as Nickel
Phosphorous (P)	7723-14-0	0.15 Max	0.1 as Phosphorous	0.1 as Phosphorous
Silicon (Si)	7440-21-3	0.15 - 2.20	None Listed	10 total dust
Sulfur (S)	7704-34-9	0.001 - 0.35	13 sulfur dioxide	5 sulfur dioxide
Tungsten (W)	7440-33-7	0 - 18	None Listed	5 insoluble compds
Vanadium (V)	7440-62-2	0.01 - 1.0	0.5 dust; 0.1 fume	0.05 dust and fume
Zinc (Zn) coating	1314-13-2	10 Max	5.0 as fume	5.0 as fume

Note: The above listing is a summary of elements used in alloying steel. Various grades of steel will contain different combinations of these elements. Trace elements may also be present in minute amounts.

II. PHYSICAL DATA

Material is (At Normal Conditions):	Appearance and Odor
☐ Liquid ☒ Solid ☐ Gas ☐ Other	Gray-Black With Metallic Lustre — Odorless

Acidity/Alkalinity	Approx		Vapor Pressure (mm Hg at 20°C)
ph = NA	Melting Point 2750°F Boiling Point NA °F	Specific Gravity (H_2O = 1) — 7 Solubility in water (% by weight) — NA	NA

III. PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection	Hands, Arms, and Body
NIOSH approved dust/mist/fume respirator should be used during welding or burning if OSHA PEL or TLV is exceeded.	Use appropriate protective clothing such as welders aprons & gloves when welding or burning. Check local codes.
Eyes and Face	**Other Clothing and Equipment**
Safety glasses should always be worn when grinding or cutting; face shields should be worn when welding or burning.	As required

IV. EMERGENCY MEDICAL PROCEDURES

Inhalation:	Remove to fresh air; if condition continues, consult physician.
Eye Contact:	Immediately flush well with running water to remove particulate; get medical attention.
Skin Contact:	If irritation develops, remove clothing and wash well with soap and water. If condition persists, seek medical attention.
Ingestion:	If significant amounts of metal are ingested, seek medical attention.

V. HEALTH/SAFETY INFORMATION

HEALTH

Steel products in the natural state do not present an inhalation, ingestion, or contact health hazard. However, operations such as welding, burning, sawing, brazing, grinding, and possibly machining, which results in elevating the temperature of the product to or above its melting point or results in the generation of airborne particulates may present hazards. The above operations should be performed in well ventilated areas. The major exposure hazard is inhalation.

Effects of overexposure are as follows:

Acute: Excessive inhalation of metallic fumes and dusts may result in irritation of eyes, nose, and throat. Also high concentrations of fumes and dusts of iron-oxide, manganese, copper, zinc, & lead may result in metal fume fever. Typical symptoms consist of a metallic taste in the mouth, dryness and irritation of the throat, chills and fever, and usually last from 12 to 48 hours.

Chronic: Chronic and prolonged inhalation of high concentrations of fumes or dust of the following elements may lead to the conditions listed opposite the element:

Iron (iron-oxide) - Pulmonary effects, siderosis.

Manganese - Bronchitis, pneumonitis, lack of coordination.

Chromium - Various forms of dermatitis, inflammation and/or ulceration of upper respiratory tract, and possibly cancer of nasal passages and lungs. Based on available information, there does not appear to be any evidence that exposure to welding fume induces human cancer.

Nickel - SAME AS CHROMIUM.

Copper - Pulmonary effects.

Vanadium - No reported cases of exposure to vanadium.

Cobalt - Inhalation of cobalt dust may cause an asthma-like disease with cough and dyspnea.

Molybdenum - Pain in joints, hands, knees and feet.

Tungsten - Some evidence of pulmonary involvement such as cough.

Lead - Prolonged exposures can cause behavioral changes, kidney damage, periphery neuropathy characterized by decreased hand-grip strength and adverse reproductive effects.

Zinc - None reported.

Occupational Exposure Limits
See Section I.

FIRE AND EXPLOSION

Flash Point	Auto Ignition Temperature	Flammable Limits in Air	Extinguishing Media
NA °F	NA °F	Lower NA % Upper NA %	NA

Fire and Explosion Hazards
None

Extinguishing Media Not to be Used
NA

REACTIVITY

Stability
☒ Stable ☐ Unstable

Incompatibility (Materials to Avoid)
Reacts with strong acids to form hydrogen gas.

Conditions to Avoid
Keep Area Well Ventilated
Non-ventilated areas when cutting, welding, burning, or brazing; avoid generation of airborne dusts and fumes.

Hazardous Decomposition Products
Metallic oxides.

VI. ENVIRONMENTAL

Spill or leak procedures
NA

Special Precautions: Use good housekeeping practices to prevent accumulation of dust and to keep airborne dust to a minimum.

Waste Disposal Method
Dust, etc. — follow federal, state, and local regulations regarding disposal.

VII. ADDITIONAL INFORMATION

Disclaimer
The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any representation or warranty, express or implied regarding the accuracy or correctness.
The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

MATERIAL SAFETY DATA SHEET
STEEL PRODUCTS

USS CODE NO. 3C012

ORIGINAL ISSUE DATE: 8/1/35 REVISED:

I. IDENTIFICATION

PRODUCT NAME: Galvanized Sheet-Carbon Steel (Hot Dipped)

COMMON NAME(S): Same

CAS NO.: 65997-19-5

INFORMATION & EMERGENCY TELEPHONE NUMBERS
(412) 433-6840 (8 a.m. – 5 p.m., Mon.-Fri.)
(412) 433-5811 (Off Hour Emergencies)

MANUFACTURER:
U. S. Steel Corporation
P. O. Box 206 (MSDS)
Pittsburgh, PA 15230

II. INGREDIENTS AND RECOMMENDED OCCUPATIONAL EXPOSURE LIMITS

NOTE: Steel products under normal conditions do not present an inhalation, ingestion or contact health hazard (See Section VI.).

BASE METAL, ALLOYING ELEMENTS AND METALLIC COATINGS	% WEIGHT	EXPOSURE LIMITS	
		OSHA PEL	ACGIH TLV
Base Metal: Iron	Balance	10 mg/M^3 for iron oxide fume	5 mg/M^3 for iron oxide fume
Alloying Elements:			
Carbon	.005/.60	None established	None established
Manganese	.05/1.50	(c) 5 mg/M^3	(c) 5 mg/M^3-dust 1 mg/M^3-fume
Phosphorus	.15 max	None for inorganic phosphates	None for inorganic phosphates
Sulfur	.05 max	13 mg/M^3 as SO_2	5 mg/M^3 as SO_2
Aluminum	.10 max	None established	10 mg/M^3
Metallic Coating:			
Zinc	8.5/9.9	5 mg/M^3	10 mg/M^3-Total ZnO dust 5 mg/M^3-Respirable ZnO dust & fume
Aluminum	0.04 max	None established	10 mg/M^3
Antimony	0.02 max	0.5 mg/M^3	0.5 mg/M^3
Lead	0.02 max	0.05 mg/M^3	0.15 mg/M^3
Iron	0.1/1.5	10 mg/M^3 for iron oxide fume	5 mg/M^3 for iron oxide fume
		(c) denotes "ceiling limit" which is not to be exceeded at any time	
Oil coating may be used; see Annex II.			

NOTE: All commercial metals contain small amounts of various elements in addition to those specified. These small quantities, frequently referred to as "trace" or "residual" elements, generally originate in the raw materials used. Typical levels of commonly involved trace or residual elements that may be encountered in steel products are provided in Annex I so that their potential hazards may be considered.

III. PHYSICAL DATA

MELTING POINT
BASE METAL: 2750° F METALLIC COATING: 800-900° F

APPEARANCE AND ODOR: Metallic Gray, No Odor

IV. FIRE AND EXPLOSION HAZARD DATA

STEEL PRODUCTS IN THE SOLID STATE PRESENT NO FIRE OR EXPLOSION HAZARD.

V. REACTIVITY DATA

Stable under normal conditions of use, storage, and transport. Will react with strong acid to liberate hydrogen. At temperatures above the melting point of the coating, may liberate zinc fumes.

VI. HEALTH HAZARD DATA

NOTE: Steel products under normal conditions do not present an inhalation, ingestion or contact health hazard. However, operations, such as burning, welding, sawing, brazing, grinding, and possibly machining, etc., which results in elevating the temperature of the product to or above its melting point or results in the generation of airborne particulates, may present health hazards.

EFFECTS OF OVEREXPOSURE:

MAJOR EXPOSURE HAZARD

☒ INHALATION ☐ SKIN CONTACT ☐ EYE CONTACT ☐ INGESTION

Chronic inhalation of high concentrations of iron oxide fumes or dusts may lead to a benign pneumoconiosis (siderosis). Inhalation of high concentrations of ferric oxide may possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.

The inhalation of high concentrations of freshly formed oxide fumes and dusts of Manganese, Copper, Lead and/or Zinc in the respirable particle size range can cause an influenza-like illness termed metal fume fever. Typical symptoms last 12 to 48 hours and are characterized by metallic taste in the mouth, dryness and irritation of the throat, followed by weakness, muscle pain, fever and chills.

EMERGENCY AND FIRST AID PROCEDURES For overexposure to airborne fumes and particulates, remove exposed person to fresh air. If breathing is difficult or has stopped, administer artificial respiration or oxygen as indicated. Seek medical attention promptly.

Treat metal fume fever by bed rest, and administer a pain and fever reducing medication.

VII. SPILL OR LEAK PROCEDURES

NOT APPLICABLE TO STEEL IN THE SOLID STATE.

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY: NIOSH/MSHA-approved dust and fume respirators should be used to avoid excessive inhalation of particulates. Appropriate respirator selection depends on the magnitude of exposure.

SKIN:
Protective gloves should be worn as required for welding, burning or handling operations.

EYE:
Use safety glasses or goggles as required for welding, burning, sawing, brazing, grinding or machining operations.

VENTILATION: Local exhaust ventilation should be provided when welding, burning, sawing, brazing, grinding or machining to prevent excessive dust or fume exposure.

OTHER PROTECTIVE EQUIPMENT:
Depending upon the conditions of use and specific work situations, additional protective equipment and/or clothing may be required to control exposures.

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:
Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Avoid breathing metal fumes and/or dusts.

OTHER COMMENTS:

No additional comments are believed to be necessary for this product.

MATERIAL SAFETY DATA SHEET
STEEL PRODUCTS

USS CODE NO. 3C013

ORIGINAL ISSUE DATE: 8/1/85 REVISED:

I. IDENTIFICATION

PRODUCT NAME: Galvanized Sheet - Electrolytic

COMMON NAME(S): Same

CAS NO.: 65997-19-5

INFORMATION & EMERGENCY TELEPHONE NUMBERS
(412) 433-6840 (8 a.m. – 5 p.m., Mon.-Fri.)
(412) 433-5811 (Off Hour Emergencies)

MANUFACTURER:
U. S. Steel Corporation
P. O. Box 206 (MSDS)
Pittsburgh, PA 15230

II. INGREDIENTS AND RECOMMENDED OCCUPATIONAL EXPOSURE LIMITS

NOTE: Steel products under normal conditions do not present an inhalation, ingestion or contact health hazard (See Section VI.).

BASE METAL, ALLOYING ELEMENTS AND METALLIC COATINGS	% WEIGHT	EXPOSURE LIMITS	
		OSHA PEL	ACGIH-TLV
Base Metal: Iron	Balance	10 mg/M^3 for iron oxide fume	5 mg/M^3 for iron oxide fume
Alloying Elements:			
Carbon	.005/.60	None established	None established
Manganese	.05/1.50	(c) 5 mg/M^3	(c) 5 mg/M^3-dust 1 mg/M^3-fume
Phosphorus	.15 max	None for inorganic phosphates	None for inorganic phosphates
Sulfur	.05 max	13 mg/M^3 as SO_2	5 mg/M^3 as SO_2
Aluminum	.10 max	None established	10 mg/M^3
Metallic Coating:			
Zinc	10 max	5 mg/M^3	10 mg/M^3-Total ZnO dust 5 mg/M^3-Resp. ZnO dust & fum
Oil coating may be used; see Annex II.		(c) denotes "ceiling limit" which is not to be exceeded at any time	

NOTE: All commercial metals contain small amounts of various elements in addition to those specified. These small quantities, frequently referred to as "trace" or "residual" elements, generally originate in the raw materials used. Typical levels of commonly involved trace or residual elements that may be encountered in steel products are provided in Annex I so that their potential hazards may be considered.

III. PHYSICAL DATA

MELTING POINT BASE METAL: 2750° F METALLIC COATING: 800° F

APPEARANCE AND ODOR: Metallic Gray, No Odor

IV. FIRE AND EXPLOSION HAZARD DATA

STEEL PRODUCTS IN THE SOLID STATE PRESENT NO FIRE OR EXPLOSION HAZARD.

V. REACTIVITY DATA

Stable under normal conditions of use, storage, and transport. Will react with strong acid to liberate hydrogen. At temperatures above the melting point of the coating, may liberate zinc fumes.

VI. HEALTH HAZARD DATA

NOTE: Steel products under normal conditions do not present an inhalation, ingestion or contact health hazard. However, operations such as burning, welding, sawing, brazing, grinding, and possibly machining, etc., which results in elevating the temperature of the product to or above its melting point or results in the generation of airborne particulates, may present health hazards.

EFFECTS OF OVEREXPOSURE:

MAJOR EXPOSURE HAZARD

☒ INHALATION ☐ SKIN CONTACT ☐ EYE CONTACT ☐ INGESTION

Chronic inhalation of high concentrations of iron oxide fumes or dusts may lead to a benign pneumoconiosis (siderosis). Inhalation of high concentrations of ferric oxide may possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.

The inhalation of high concentrations of freshly formed oxide fumes and dusts of Manganese, Copper, Lead and/or Zinc in the respirable particle size range can cause an influenza-like illness termed metal fume fever. Typical symptoms last 12 to 48 hours and are characterized by metallic taste in the mouth, dryness and irritation of the throat, followed by weakness, muscle pain, fever and chills.

EMERGENCY AND FIRST AID PROCEDURES For overexposure to airborne fumes and particulates, remove exposed person to fresh air. If breathing is difficult or has stopped, administer artificial respiration or oxygen as indicated. Seek medical attention promptly.

Treat metal fume fever by bed rest, and administer a pain and fever reducing medication.

VII. SPILL OR LEAK PROCEDURES

NOT APPLICABLE TO STEEL IN THE SOLID STATE.

I. SPECIAL PROTECTION INFORMATION

RESPIRATORY: NIOSH/MSHA-approved dust and fume respirators should be used to avoid excessive inhalation of particulates. Appropriate respirator selection depends on the magnitude of exposure.

SKIN:
Protective gloves should be worn as required for welding, burning or handling operations.

EYE:
Use safety glasses or goggles as required for welding, burning, sawing, brazing, grinding or machining operations.

VENTILATION: Local exhaust ventilation should be provided when welding, burning, sawing, brazing, grinding or machining to prevent excessive dust or fume exposure.

OTHER PROTECTIVE EQUIPMENT:
Depending upon the conditions of use and specific work situations, additional protective equipment and/or clothing may be required to control exposures.

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:
Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Avoid breathing metal fumes and/or dusts.

OTHER COMMENTS:

No additional comments are believed to be necessary for this product.

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

#6

DO NOT WRITE IN THIS SPACE
ATT. ☐ DIS. ☐ REJ. ☐

Required under authority of Act 64, P.A. 1979, as amended and Act 136, P.A. 1969.

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969.

Please print or type.

Form Approved. OMB No. 2000-0404. Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. IND011616214716 — Manifest Document No. 010001
2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
KAMPCO Steel Products
57533 CR 3. South
Elkhart Indiana 46517

4. Generator's Phone (219) 294-5466

A. State Manifest Document Number: MI 0696653
B. State Generator's ID:

5. Transporter 1 Company Name: Chemical Services Corp
6. US EPA ID Number: ILD980701110
C. State Transporter's ID:
D. Transporter's Phone: 312-597-3380

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID: 1301
F. Transporter's Phone:

9. Designated Facility Name and Site Address
Chem-NET services
18550 Allen Rd
Wyandotte, MI 48192

10. US EPA ID Number: MID096963194
G. State Facility's ID:
H. Facility's Phone: 219-234 0444 1

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a. WASTE Topcoat Sludge NA9189 Hazardous Waste Solid NOS	10	17H	10 X55 550	G	D001	
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above: a/ / b/ / c/ / d/ /

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable International and national government regulations.

Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002(b) of RCRA, I also certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of treatment, storage or disposal currently available to me which minimizes the present and future threat to human health and the environment.

Printed/Typed Name	Signature	Date Month Day Year
		10 18 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year
CALVIN J DEVRIES	Calvin J DeVries	10 18 85

18. Transporter 2 Acknowledgement or Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year
RAY E. Gamble	Ray E. Gamble	

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date Month Day Year
		10 18 85

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 4-85)

To be mailed by Generator to: Michigan DNR, Box 30038, Lansing, MI 48909

PR 5110 Rev. 4/85

CHEMICAL SERVICES CORP.

4330 WEST 137th PLACE • CRESTWOOD, ILLINOIS 60445
(312) 597-3380

№ 9490

Date Oct. 18, 1985

SHIPPER (From) Kamp-Co Steel

ADDRESS ____ **STATE** ELKHART, IND. **COUNTY** ____

DESTINATION (To) CHEM CO **PROCESSING SITE** ____

ADDRESS ____ **STATE** MICH **COUNTY** ____

HAULER PERMIT # 1301 **SUPPLEMENTARY PERMIT #** ____ **MANIFEST #** 06966653

NO. OF UNITS	HM	DESCRIPTION AND CLASSIFICATION	QUANTITY
VAN		WASTE TOPCOAT SLUDGE	550 GAL

PLACARD NUMBER	HAZARD CLASS	WEIGHT
9189	WASTE SOLID DRIVE SAFLEN N.O.S.	5,500 LBS

THIS IS TO CERTIFY THAT THE ABOVE NAMED ARTICLES ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED, AND LABELED AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

Ray E. Hamble **SIGNATURE**

SPECIAL COMMENTS ____

TIME:
CUSTOMER: ARRIVED 1:00 PM DEPARTED 2:00 PM

UNLOADING: ARRIVED ____ DEPARTED ____

TRUCK # 220 TRAILER # 021 DRIVER: Cal O'Brien

FROM:

KAMPCO
STEEL PRODUCTS, INC.

57533 (R 3) CR 3 S. ELKHART, INDIANA 46517
PHONE (219) 294-5466

TO:

Waste Management Division
U.S. E.P.A. - Region V
230 South Dearborn St.
Chicago, Illinois 60604

Attention: Ms Susan Swales

HSM

DPi 3376